

CLAIM AMENDMENTS

1. (Currently Amended) A method ~~for~~ of manufacturing a semiconductor optical device comprising:

~~step for forming~~ growing an epitaxial ~~growth-layer~~ structure containing at least an active layer which can emit light, ~~using of~~ a III-V ~~group~~ semiconductor material including a group V element;

~~step for forming an insulation~~ insulating layer over the epitaxial ~~growth-layer~~ structure, which can prevent the V group element from escaping during heat treatment;

~~step for applying heat treatment to~~ treating the epitaxial ~~growth-layer~~ structure at a temperature of at least 800 degree- degrees C or more;

~~step for removing the insulation~~ insulating layer.

2. (Currently Amended) The method ~~for~~ of manufacturing a semiconductor optical device according to Claim 1 comprising: ~~step for performing PL~~ a photoluminescence measurement after the heat-treatment step treating.

3. (Currently Amended) A semiconductor optical device comprising: ~~an epitaxial growth-layer formed-structure~~ of a III-V group semiconductor material, containing at least an active layer which can emit light, wherein ~~the composition of the epitaxial growth-layer is changing~~ structure continuously changes near ~~the~~ an interface.

4. (Currently Amended) The semiconductor optical device according to Claim 3, wherein a photoluminescence wavelength of the optical device is blue-shifted, as compared to a semiconductor optical device which has an active layer with the same composition as said active layer and an epitaxial ~~growth-layer whose~~ structure with a composition is changed that changes stepwise near the interface.

5. (Currently Amended) The semiconductor optical device according to Claim 4, wherein the photoluminescence wavelength is blue-shifted by at least 20 meV ~~or more~~.

6. (Currently Amended) The semiconductor optical device according to Claim 3, wherein distortion ~~between~~ of the epitaxial ~~growth-layers~~ structure is ~~more eased, as~~ reduced compared to a semiconductor optical device which has an active layer with the same

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composition as said active layer and an epitaxial ~~growth layer whose~~ structure with a
composition ~~is changed~~ changing stepwise near the interface.